# EXT3PB-160 Automatic Transfer Switch (ATS PC Class)

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## Model and Meaning

EX T3 PB - 160 □ □

- Company code
- PC class automatic transfer switch (two stations)
- Product Category
- Installation method: Din-rail installation
- Case grade: 160
- Pole: 2P/4P
- Rated working voltage: AC220V, AC110V
- Rated working current: 16,20,25,32,40,50,63,80,100,125,160

## Product Introduction

**Control Device:** Built-in Controller

**Product Structure:** No power interruption, rail-mounted, high current capacity, compact size, two-section design, simple structure, integrated ATS.

**Features:** Fast switching speed, low failure rate, easy maintenance, and reliable performance.

**Wiring Method:** Front panel wiring

**Transfer Modes:** Grid-to-grid, grid-to-generator, solar-to-grid, and automatic transfer with self-restoring function.

**Frame Size:** 160

**Rated Current (A):** 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160

**Product Type:** Direct load type

**Number of Poles:** 2P, 4P

**Product Standard:** GB/T 14048.11

**ATS Class:** PC Class

**Transfer Time:** 0.008s / 8ms

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## Product Overview

The Dual Power Automatic Transfer Switch (ATS) is a newly developed compact power transfer switch designed for household applications. It is mainly used to monitor whether the main power supply or backup power supply is operating normally. When the main power supply fails, the backup power supply automatically starts operating to ensure continuity, reliability, and safety of the power supply. This product is specially designed for household DIN rail installation.

The Dual Power Automatic Transfer Switch is suitable for emergency power supply systems operating at 50Hz or 60Hz with a rated AC voltage of 400V. The ATS features a robust structure, reliable switching performance, easy installation and maintenance, and a long service life. It is widely used in applications where continuous power supply is required. It supports both automatic and manual operation. The ATS consists of a transfer switching device (TSE) and a controller.

In accordance with GB/T 14048.11, which is based on IEC 60947-6-1 (Low-voltage Switchgear and Controlgear – Part 6-1: Multiple Function Equipment – Transfer Switching Equipment), the ATS is designed to meet the requirements for low-voltage switching and control equipment.

## Normal Operating and Installation Conditions

**1. Ambient Air Temperature**

The maximum ambient temperature shall not exceed +40°C, and the minimum temperature shall not be lower than -5°C. The average temperature within 24 hours shall not exceed +35°C.

**2.Altitude**

The altitude of the installation site shall not exceed 2,000 meters above sea level.

**3. Atmospheric Conditions**

When the maximum ambient temperature reaches +40°C, the relative humidity at the installation site shall not exceed 50%. Higher relative humidity is permitted at lower temperatures. For example, at +25°C, the relative humidity may reach 90%. Special measures should be taken to prevent condensation on the product surface caused by temperature variations.

**4. Pollution Degree**

The ATS complies with Pollution Degree 3 as specified in GB/T 14048.11.

**5. Installation Category**

The installation category of the ATS shall comply with the category specified in GB/T 14048.11.

**6. Installation Conditions**

The ATS can be installed vertically in a control cabinet or distribution panel. Ensure that the installation clearances meet the requirements specified in Figure 5.

## Technical Specifications

| Parameter | Specification | |
|---|---|---|
| Frame Size | 160A | |
| Rated Current (Ie) | 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160A | |
| Rated Insulation Voltage (Ui) | AC 690V, 50Hz | |
| Rated Operational Voltage (Ue) | AC 400V, 50Hz | |
| Classification | PC Class: Capable of making and carrying current, but not intended for breaking short-circuit current | |
| Utilization Category | AC-33iB | AC-31B |
| Number of Poles | 2P | 4P |
| Weight | 1.7 | 2.6 |
| Electrical and Mechanical Endurance | Lifespan: 1,300 operations; manual operations: 4,000 | |
| Rated Short-Circuit Current (Iq) | 50kA | |
| Short-Circuit Protective Device (Fuse) | RT16-250A | |
| Rated Impulse Withstand Voltage(Uimp) | 8kV | |
| Control Circuit | Rated control voltage (Us): AC 220V/50Hz; normal operating range: 85–110% of Us | |
| Auxiliary Circuit | 1 relay, each equipped with two sets of changeover contacts; contact capacity: AC 220V/50Hz, Ie = 5A | |
| Contactor Transfer Time | <50ms | |
| Operating Transfer Time | <50ms | |
| Return Transfer Time | <50ms | |
| Power Supply Disconnection Time | <50ms | |

## 160 Wiring Diagram

**Figure 1: 2P Wiring Diagram**

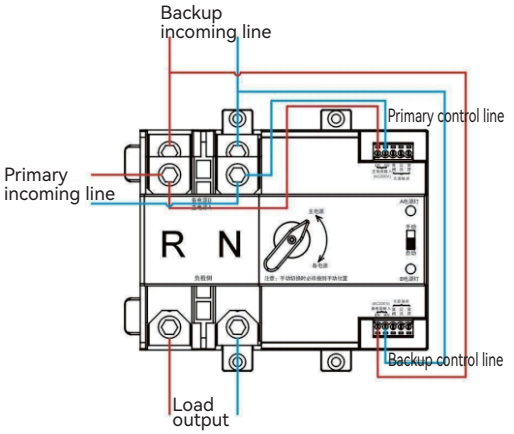



**Figure 2: 4P Wiring Diagram**

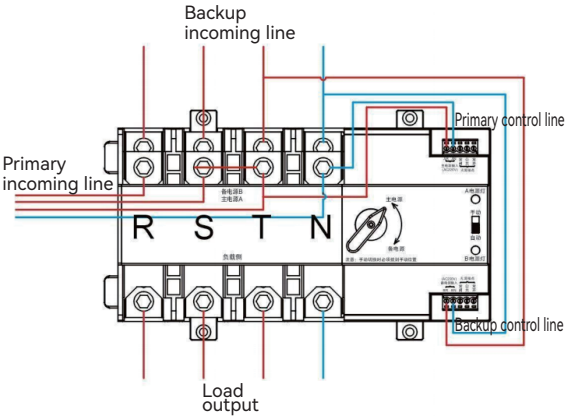



**Figure 3:**
**Wiring Method for PV Inverters**

Note: The inverter output must reach 2 kW to supply power to the AR and AN terminals of the dual-power transfer switch.

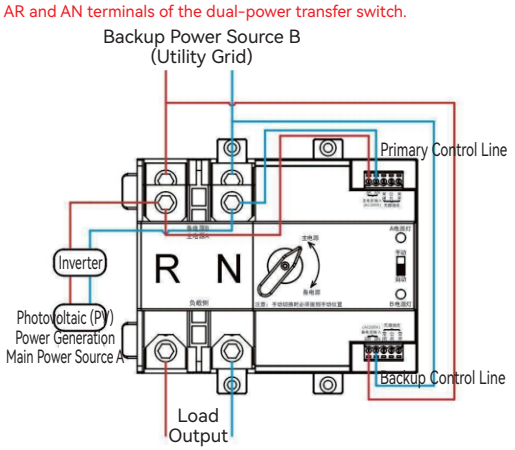
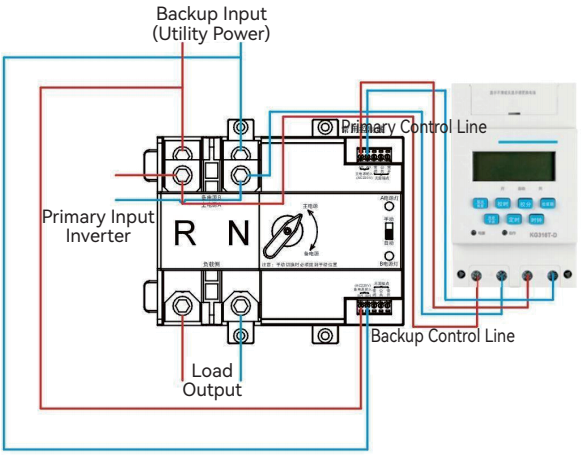
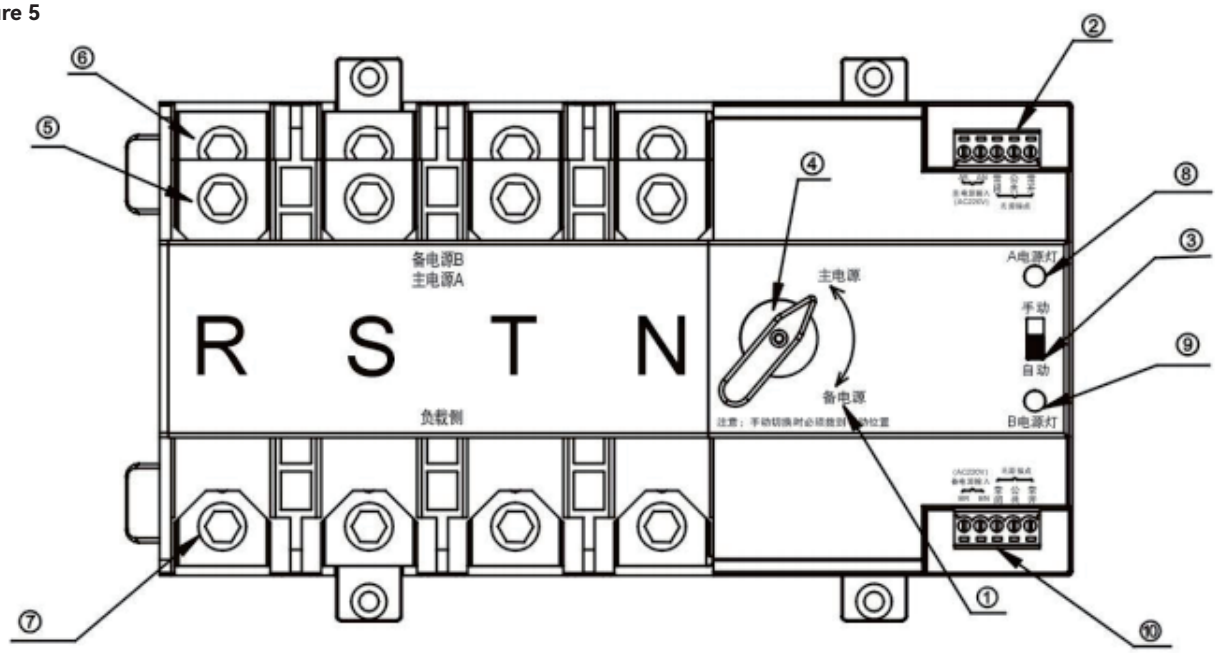


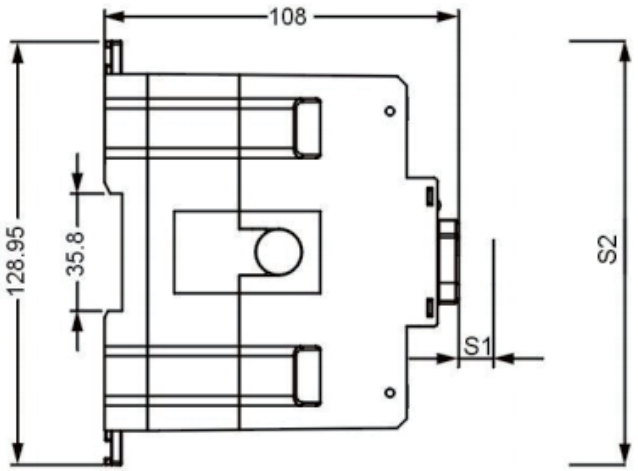

**Figure 4: Wiring Configuration for Timed Switching**

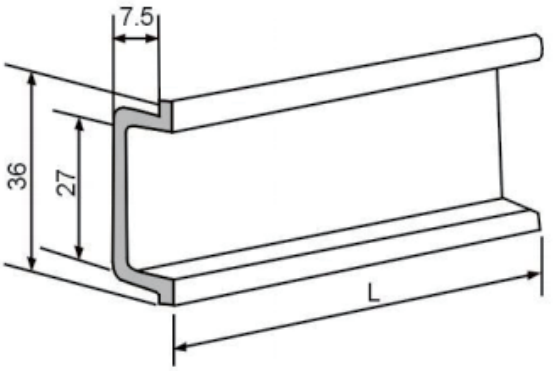


## External and Mounting Dimensions

**Figure 5**




Safety distances: S1: ≥30mm, S2: ≥203mm

① Status/position indicator
② Main power supply terminals and passive signal (AC220V)
③ Manual/Automatic switch
④ Manual operating handle
⑤ Main terminals for the primary (normal) power supply
⑥ Main terminals for the backup (standby) power supply
⑦ Main terminals for the load side
⑧ Power supply A indicator
⑨ Power supply B indicator
⑩ Backup power supply terminals and passive signal (AC220V)

B

## External and Mounting Dimensions

Figure 6

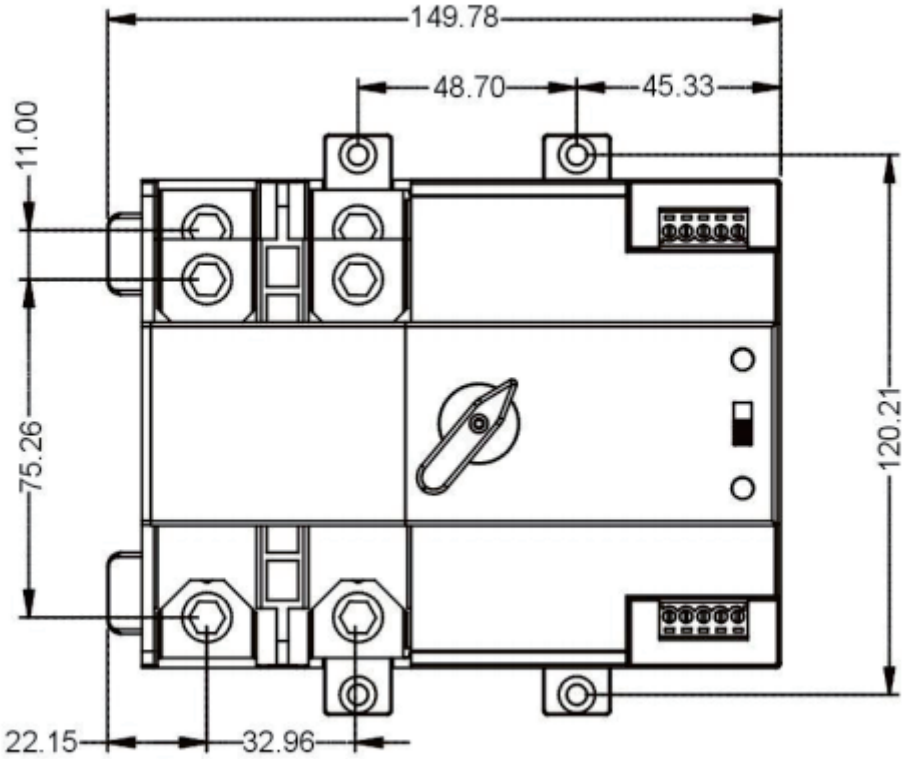



Figure 7

